

**REMARKS**

Claims 1-19 are pending in this application. Claims 1, 9, 13 and 17-19 are independent claims. By this amendment, claims 1 and 17 are amended to overcome the rejection under §112, 1<sup>st</sup> paragraph. Reconsideration in view of the above amendments and following remarks is respectfully solicited.

**I. ALLOWABLE SUBJECT MATTER**

The Office Action has indicated that claims 3, 4, 6 and 7 would be allowable is rewritten to overcome the rejection(s) under 35 U.S.C. 112, 2<sup>nd</sup> paragraph (should be 1<sup>st</sup> paragraph) and to include all of the limitations of the base claim and any intervening claims. In addition, the Office Action has indicated that claims 10, 11, 14 and 15 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. As such, all of claims 3, 4, 6, 7, 10, 11, 14 and 15 are admitted as containing allowable subject.

However, applicant respectfully submits that all of claims 1-19 are allowable, for at least the reasons set forth below.

**II. THE CLAIMS SATISFY THE REQUIREMENTS OF 35 U.S.C. §112, 1<sup>st</sup> PARAGRAPH**

The Office Action rejects claims 1-8 and 17 under 35 U.S.C. §112, 1<sup>st</sup> paragraph. This rejection is respectfully traversed.

Specifically, the Office Action alleges that there is no support in the specification for a concurrently adjustment made to the image acquisition device and the pixel values based on the rate of pixels having the maximum brightness among all pixels. In order to expedite prosecution, claims 1 and 17 are amended so that adjustment to the acquisition device is deleted from the claims.

As such, the amendment to claims 1 and 17 obviates the rejection of claim 1-8 and 17 under 35 U.S.C. §112, 1<sup>st</sup> paragraph.

Accordingly, withdrawal of the rejection of claim 1-8 and 17 under 35 U.S.C. §112, 1<sup>st</sup> paragraph is respectfully requested.

### **III. THE CLAIMS DEFINE PATENTABLE SUBJECT MATTER**

The Office Action rejects claims 1, 2, 5, 8, 9, 12, 13 and 16-19 under 35 U.S.C. §102(e) as being anticipated by U.S. Patent No. 6,061,091 to Van de Poel et al. (hereafter Van de Poel). This rejection is respectfully traversed.

Applicant respectfully submits that Van de Poel fails to teach or suggest each and every feature as set forth in the claimed invention. For example, Van de Poel at least fails to teach or suggest making an adjustment to the pixel value based on the rate of pixels having a maximum brightness, as set forth in claims 1 and 17, and computing a histogram of the brightness as set forth in claims 9, 13, 18 and 19.

Claims 1, 9 and 13 recite, *inter alia*, expressing a pixel value of each pixel in the image data as a set of three mutually independent components. The brightness of each pixel is defined based on the three components. A rate of pixels is determined based on a number of pixels having a maximum brightness among all pixels.

Further, claims 1 and 17 recite that an adjustment to the pixel value is made based on the determined rate. In addition, claims 9, 13, 18 and 19 recite that a histogram of brightness is computed based on the three components or based on chrominance.

The brightness adjustment method/apparatus of the present invention is capable of adjusting brightness, not based on a mean value but based on the number (frequency) of pixels having the maximum brightness. In other words, regarding the brightness of the image, the brightness is determined by the frequency of a highlighted portion rather than by the mean value of the entire image. As such, the rate of pixels having the maximum brightness among all pixels is made a predetermined ratio.

In contrast to the present invention, Van de Poel merely discloses image processing parameters for gradation correction of a digital image which includes specular reflections. Van de Poel is mainly concerned with detecting the presence

of specular reflections, modifying the exposure time, and applying a gradation correction to the image.

The Examiner has directed applicant's attention to Fig. 3 of Van de Poel in order to show a cumulative histogram plotting the density frequency and is trying to equate Van de Poel's density histogram to the claimed histogram of brightness.

However, applicant respectfully submits that Van de Poel's density histogram is distinguishable from the claimed histogram of brightness. For example, Van de Poel's density histogram as depicted in Fig. 3 is merely a cumulative frequency of occurrence  $Y$  concerning the density  $X$ . (see Van de Poel, col. 9, lines 46-60).

Thus, Van de Poel's Fig. 3 is not a brightness histogram, as wrongly categorized by the Examiner. Secondly, Van de Poel Fig. 3 only shows a one color channel histogram. (see Van de Poel, col. 13, lines 34-42). Whereas in the claimed invention, the brightness histogram is computed based on three mutually independent components, as set forth in claims 9 and 13, and based on a chrominance value as set forth in claims 18 and 19.

Furthermore, Van de Poel uses a maximum density value  $X_{MAX}$  rather than a maximum brightness value as set forth in the claimed invention. Specifically, Van de Poel uses a specular density  $X_1$ , a highlight density  $X_2$  and a maximum density  $X_{MAX}$  to compute a gradation correction curve. Applicant respectfully submits that Van de Poel's gradation correction system is thus completely

different and distinguishable from the brightness correction methods/apparatus of the present application.

Furthermore, the only adjustments made by Van de Poel includes the photographer adjusting the exposure time of the camera based on the one color channel density histogram. No adjustment to the pixel values based on the rate is done by Van de Poel.

According to MPEP §2131, "a claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference." *Verdegaal Bros. v. Union Oil Co. Of California*, 814 F.2d 628, 631, 2 USPQ2d 1051 (Fed. Cir. 1987). "The identical invention must be shown in as complete detail as is contained in the ...claims." *Richardson v. Suzuki Motor Co.*, 868 F.2d 1226, 1236, 9 USPQ2d 1913 (Fed. Cir. 1989). The elements must be arranged as required by the claims, but this is not an *ipsisimilis verbis* test, i.e., identity of terminology is not required. *In re Bond*, 910 F.2d 831, 15 USPQ2d 1566 (Fed. Cir. 1990).

Applicants respectfully submit that the Office Action has failed to establish the required *prima facie* case of anticipation because the cited reference, Van de Poel, fails to teach or suggest each and every feature as set forth in the claimed invention.

Applicant respectfully submits that independent claims 1, 9, 13 and 17-19

are allowable over Van de Poel for at least the reasons noted above.

As for each of the dependent claims not particularly discussed above, these claims are also allowable for at least the reasons set forth above regarding their corresponding independent claims, and/or for the further features claimed therein.

Accordingly, withdrawal of the rejection of claims 1, 2, 5, 8, 9, 12, 13 and 16-19 under 35 U.S.C. §102(e) is respectfully solicited.

#### **IV. CONCLUSION**

In view of the foregoing, Applicants respectfully submit that the application is in condition for allowance. Favorable reconsideration and prompt allowance are earnestly solicited.

Should the Examiner believe that anything further would be desirable to place this application in better condition for allowance, the Examiner is invited to contact Carolyn T. Baumgardner (Reg. No. 41,345) at (703) 205-8000 **to schedule a Personal Interview.**

If necessary, the Commissioner is hereby authorized in this, concurrent, and future replies, to charge payment from or credit any overpayment to Deposit

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Account No. 02-2448 for any additional fees required under 37 C.F.R. §1.16 or under 37 C.F.R. §1.17; particularly, the extension of time fees.

Respectfully submitted,

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Attachment: Version with Markings to Show Changes Made

**VERSION WITH MARKINGS SHOWING CHANGES MADE**

**IN THE CLAIMS:**

*The claims are amended as follows:*

1. (Twice Amended) A method of adjusting the brightness of an image, the method comprising the steps of:

acquiring image data by an image acquisition device;

expressing a pixel value of each pixel in said image data as a set of three mutually independent components;

defining the brightness of each pixel based on said three components;

determining a rate of pixels based on a number of pixels having a maximum brightness among all pixels; and

making an adjustment to [said image acquisition device and/or] said pixel value based on the rate.

17. (Amended) A method of adjusting the brightness of an image, the method comprising the steps of:

acquiring image data by an image acquisition device;

expressing a pixel value of each pixel in said image data as a chrominance value;



defining the brightness of each pixel based on said chrominance value;

determining a rate of pixels based on a number of pixels having a maximum brightness among all pixels; and

making an adjustment to [said image acquisition device and/or] said pixel value based on the rate.